IN THE CLAIMS:

1. (currently amended) An image transport engine~~Software System, referred to as Image Transport Engine~~, embodied within a computer-readable medium, for processing a sequence of images by deploying ~~Image Processing Functions~~image processing functions onto a multiprocessor platform~~system called Platform, said Platform~~ generating input image data in order to provide processed output image data, said engine being configured for operation according to~~Software System comprising:~~ a software data partitioning model~~, referred to as Communication Pattern, which~~that partitions the images of the sequence using time-stamped data packets, said model being formed of software modules linked by oriented connections associated to the modules through ports, at least one of the modules being configured for activating a respective, attached one of said image processing functions, for performance that temporally overlaps at least one of receiving and transferring out a packet of said packets that, correspondingly, is to be, or has been, subject to, image processing of the respective, activating module~~the transfer of which may overlap the execution of said image processing functions~~.

2. (currently amended) The ~~Software System~~engine of claim 1, wherein ~~the Communication Pattern is formed of nodes linked by ares; the nodes are Software Modules; the ares are oriented Connections associated to the Modules through Ports; and~~ each module~~Module activates one Image Processing Function attached to it and~~ manages data transfers and synchronization.

3. (currently amended) The ~~Software system~~engine of claim 2, wherein~~:~~ the

modules exchange ~~a Module exchanges~~ information by means of respective ports ~~with an other Module through Ports;~~, said modules including a source module ~~among the Modules, there are one Source Module~~ responsible ~~to generate~~for generating the time-stamped data packets and a time reference data structure ~~labeled Time-Ref, which~~ that locates every image data ~~packets~~packet of the image sequence ~~a given Image Sequence;~~, said modules additionally including at least one ~~or~~ sink module for receiving said output image data ~~several Sink Modules used as Output Data receptors;~~, said modules also including ~~and Ordinary Modules~~ ordinary modules connected between the source module ~~Source Module~~ and the at least one sink module ~~Sink Modules~~ in such a manner that the image data flows in one direction only and in an a-cyclic manner~~,~~; each of the ordinary modules having respective ones of said ports, wherein, with respect to said model, the source module has no input port, and the sink modules has no respective output ports ~~Source Module has no Input Port and the Sink Modules have no Output Ports; the Ordinary Modules have Input and Output Ports~~.

4. (currently amended) The ~~Software system~~engine of claim 3, wherein, among the oriented connections ~~Connections, there are data Connections dealing with Data and~~ are those that are one-way connections, said one-way connections being specialized in the transfer of image data packets~~, which are one-way Connections~~.

5. (currently amended) The engine ~~Software system~~ of claim 4, wherein the time reference data structure ~~labeled Time-Ref~~ locates the image data packets with respect to an image index in the image sequence and with respect to a data packet position within

~~the~~a current image.

6. (currently amended) The ~~Software system~~engine of claim 3 or 5, wherein the source module~~Module~~ partitions ~~the Input Data~~input data into data packets that are data slices referred to as ~~Image Strips~~image strips, an ~~Image Strip~~image strip being a packet of consecutive ones of image lines, parallel to the image lines, the data arriving along said lines formed of pixels that ~~have~~are to be processed, ~~; and Image Strips~~said engine being configured to enable an image strip of said image strips ~~may~~to overlap another of said ~~other Image Strips~~image strips.

7. (currently amended) The ~~Software system~~engine of claim ~~6~~7, said image strip having an~~comprising the definition of Overlapping Areas for the~~ active area, said image strips having overlapping areas ~~of the Image Strips, which are formed of extra parts of Image Strips~~ located on either ~~sides~~side of said active area ~~of the Image Strips~~.

8. (currently amended) The ~~Software system~~engine of claim 7 for programming a distributed application configured for~~comprising steps of~~ transmitting ones of said image strips~~Image Strips~~ with ~~Overlapping~~overlapping areas between emitting ~~Modules~~modules and receiving ~~Modules~~modules, and further configured for~~wherein steps of~~ adjusting ~~the~~a difference between ~~the~~an instant of production of ~~Image Strips~~image strips by a ~~Module~~module and ~~the~~an instant of emission of the produced image strips~~Image Strips by said Module~~, and ~~steps of~~also configured for adjusting a~~the~~ difference between an~~the~~ instant of reception of ~~Image Strips~~image strips by a ~~Module~~module and ~~the~~an instant of

processing of the received image stripsImage Strips by said Module, for performingthe adjustments being made for optimal overlapping between data transfer anand data processing.

9. (currently amended) The Software systemengine of claim 56, wherein the source module partitions input data into data packets that are data slices referred to as image strips, an image strip being a packet of consecutive ones of image lines, parallel to the image lines, the data arriving along said lines formed of pixels that are to be processed, said engine being configured to enable an image strip of said image strips to overlap another of said image strips, wherein thesaid time reference data structure labeled Time-Ref locates the Image Stripsimage strips with respect to the current image index in the sequence and with respect to the Image Stripimage strip position within the current image,; and the oriented connectionsData Connections insure insuring repeated transfers of successive Image Stripsimage strips together with synchronization information, said modules including Time-Ref and all Modules repeatedly receiving, processing and transmitting the image stripsreceive, process and transmit the Image Strips.

10. (currently amended) The engineSoftware System of claim 2, wherein the modelCommunication Pattern comprises one the following types of oriented connectionsConnections between two Portsports: A Pipe-Line Connectiona pipe line connection that is a point to point Connectionconnection, which transfers consecutive Image Stripsimage strips; Aa [1/n]-Scatter Connectionscatter connection that is a point to point Connectionconnection belonging to a group of n Connectionsconnections all issued

from a common ~~Output Port~~output port, which transfers one ~~Image Strip~~image as ~~every~~ n ~~Image Strips~~image strips; a~~A~~ [1/n]-~~Gather Connection~~gather connection that is a point to point ~~Connection~~connection ~~belonging to~~comprising a group of n connections all reaching a common ~~Input Port~~input port, which ~~transfers one Image Strip one every n Image Strip and~~ gathers ~~all then~~ ~~Image Strips~~image strips in transferring one image comprised of the gathered image strips ~~reaching this common Output Port~~.

11. (currently amended) The ~~Software system~~engine of claim 10, ~~comprising method of~~configured for task partitioning and/or ~~method of~~ data partitioning among structures task-partitioned using pipe line connections~~which Task Partitioning Structures using Pipeline Connections~~, wherein ~~the Image Processing Functions~~said image processing functions are applied one after the other along ~~the~~a physical data path linking the involved ~~Modules~~modules, each ~~Module~~involved module activating a given task for all the ~~Image Strips~~image strips.

12. (currently amended) The ~~Software system~~engine of claim 10, ~~comprising method of~~configured for task partitioning and/or ~~method of~~ data partitioning ~~among~~ which utilizes ~~Scatter/Gather~~scatter/gather type of ~~Data Partitioning~~data partitioning using a [1/n]-~~Scatter Connection~~scatter connection that distributes ~~the Image Strips~~an image among~~in~~ n destination ~~Modules~~modules, according to ~~Image Strip Indices~~image strip-indices with possible spatial shifts between ~~Images Strips~~image strips and time delay adjustments, and/or using a [1/n]-~~Gather Connection~~gather connection that gathers n ~~Image Strips~~image strips in a destination ~~Module~~module according to ~~their Image Strip~~

~~indices~~image strip-indices.

13. (currently amended) The ~~Software system~~engine of claim 10, wherein the model is configured with~~comprising Data Partitioning Structures~~ data partitioning structures that use pipeline connections ~~using Pipeline Connections~~, ~~and~~ a ~~propriety~~property of the ~~Source Module~~source module ~~that is~~being to convey two synchronous output streams as if they were emanating from two distinct parts of images, and gathering said two parts of images within ~~the Sink Image Processing~~a sink image processing function ~~and~~to push the final result towards a targeted ~~Terminal Port~~terminal port external to the model.

14. (currently amended) A medical examination imaging apparatus having means for acquiring medical digital image data and using ~~a Software System~~said image transport engine according to claim 1 having access to said medical digital image data ~~according to claim 1~~, ~~and~~said apparatus having display means for displaying the medical digital images and the processed medical digital images.

15. (canceled)

16. (new) The image transport engine of claim 1, wherein said packets comprise a pair of packets that contain respective portions of an image such that, with respect said image, one packet of the pair spatially overlaps the other.

17. (new) A method for processing a sequence of images, comprising:

partitioning the images of the sequence using time-stamped data packets; and

forming a model that includes software modules linked by oriented connections associated to the modules through ports, at least one of the modules being configured for activating a respective, attached one of image processing functions, for performance that temporally overlaps at least one of receiving and transferring out a packet of said packets that, correspondingly, is to be, or has been, subject to, image processing of the respective, activating module.